

The

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HOW WELL DO YOUR PLANTS GLOW by JAMES ORAVETZ

One of the most important keys to success in growing Cactus and Succulent plants is your potting soil. We oooh and aaah when looking at obviously well grown, healthy plants. While the top, above ground portion, of the plant wins ribbons, trophies and praise, the most essential and vital part of the plant is rarely seen--THE ROOTS. So lets stop growing the tops of our plants and begin cultivating the roots. A well grown, well cared for root system will reward you with the strong, healthy, award winning plant you have always dreamed of.

What does it take to grow a strong, healthy root system you ask? In addition to good cultural practices, the most important is your potting mix.

What is good potting mix you ask? Ask that question to ten people and you will get ten different answers.

For the best results your potting mix should:

- (a) Drain off excess water quickly
- (b) Retain moisture
- (c) Remain open for air circulation through the root system
- (d) Have enough weight/firmness to support the plant
- (e) Not break down quickly
- (f) Not contain high amounts of peat moss.

Now, let me be the first of ten people to tell you what potting soil mix I use.

First, select the proper measuring device: a one pound or a three pound coffee can works just fine. My secret formula is:

- 3 cans of Kelloggs Potting Soil
- 2 can pumice -- medium size
- 1 can silica sand/turkey grit
- 1 can of washed builders sand

To this basic mix, add one tablespoon of bonemeal or superphosphate

using the one pound coffee can, or two tablespoons if you use the three pound can. Moisture the mix with water containing fungicide, your favorite brand. Mix well.

Why this mix you ask? Kelloggs Potting Soil is composed of: composted oak leaf mulch, shredded redwood bark, ground wood products, nitrohumis, sewage sludge, very little peatmoss, fine sand and a touch of dolomite to adjust the PH.

The Kelloggs retains moisture and food. The pumice retains moisture and holds the soil open. The silica sand/turkey grit and builders sand hold the mix open for air circulation and adds weight to the mix to support the plant.

This is a good basic mix. A great many Cactus and Succulent plants can be grown successfully in it. However, there are a few species that require a modified mix. Either a little more or a little less compost in the mix. This mix can be adjusted by using a little more or less Kelloggs Potting Soil for these special plants.

I have used this mix for seedlings, cuttings and established plants.

Success or failure with some plants depends on HOW they are re-potted. I'll pass on to you my methods of repotting in the next installment of HOW WELL DO YOUR PLANTS GLOW.



CONCLUSIONS AFTER THIRTY YEARS OF EXPERIMENTS by FRANK HENNESSEY

Phil and I have experimented with a number of mixtures. Remember if you get twenty serious growers together you will get twenty mixtures. But the common denominator of them all will be a friable, well drained mixture.

I hope more of our members will experiment with potting mixes and report to us what they think is a good one.

Don't repot all your plants with a new mix. Do a portion and mark the pots with the new mix. Observe the plants. Compare results with the old mix to see which grows at the faster rate. Unpot a few after six months to see if the roots

are stronger. Don't accept any new mix just because someone thinks it is better.

The basic part of our mixture is Unigro Cactus Mix. It is available at Tip Top and Baker's nurseries, and perhaps others in the area. I buy 1-1/2 cubic foot bags (39 dry quarts.) It contains redwood sawdust, ground fir bark, agricultural pumice, washed sand, and peat moss. To this I add 20% by volume of garden soil, and a small amount of powdered gypsum, and a very small amount of Osmacote, a very slow dissolving fertilizer (14-14-14.)

The addition of garden soil can give benefits as well as harmful results.

All garden soils contain some fungi as well as various bacteria. These things are present when plants are put directly in the ground. Since we have 800 to 900 plants in the ground without any more trouble than potted plants, I am willing to take a chance on the possible benefits derived. Also there are many dissolved minerals in the garden soil that are beneficial to plants. The garden soil is a great aid in the decomposition of the organic parts of the mix.

The gypsum is to prevent acid buildup from the decomposition of the redwood sawdust, fir bark and peat moss, as well as helping white thorned cactus to stay nice and white.

Osmacote replaces the nitrogen used by the bacteria in ~~the~~ decomposition as well as adding phosphates needed by the plant to bloom.

Now for the specifics of my mixture. My measure is a 3 pound coffee can, same as Jim Oravetz. (I am going to miss these cans when they are no longer available.)

- 8 cans of Unigrow Cactus Mix
- 2 cans of garden soil sifted.
- 1 (1 pound) Crisco can of powdered gypsum
- 2 tablespoons of Osmacote.

Mix all ingredients very well so that it is hard to tell one substance

from another, except for the pumice.

When potting the mix should be damp, NOT WET. When you squeeze a handful it should not ball but should feel damp. If you are using clay pots, soak them thoroughly before using. If the potting mix dries out it should be re-wet again.

Cover any left over mix with plastic to slow down the drying process and to prevent your cat, or your neighbor's cat, from getting into it. They consider potting mix to be high class kitty litter.



PLANT HORMONES by MIKE GOODSON

(Notes taken from a lecture by Prof. Nelson Leonard, a noted authority on plant hormones.)

First let me say that the term "growth hormone" is defined as a compound that is made within the plant, and is, under certain conditions, transported elsewhere in the plant to directly or indirectly stimulate growth. Incidentally, growth is usually stimulated in one concentrated area, rather than everywhere: that is, cell elongation, protein formation (cell walls etc.,) roots are examples.

Different growth hormones have been discovered and identified as a result of research into various aspects of plant growth, such as causes for plants growing toward light, fruit ripening, etc. Once the molecular structure of any hormone was determined, chemists could try to make similar compounds, some of which showed surprising results when they were used on plants.

Below are listed several hormones or synthetic compounds that act like hormones, and the specific actions they cause.

INDOLE-ACETIC ACID (IAA) (OXINE).....is transmitted ~~FROM~~ ^{to} growing tip, causes curvature towards light, also excessive rooting.

2-4 DICHLOROPHENOXYLACETIC ACID (2-4-D) and NAPHTHYL ACETIC ACID, both seem to be helpful to tuberous rooted plants.

GIBBERELLINS (there are various ones)....reverse the dwarfing trait, will make most plants grow larger or at least faster. In grapes it will cause larger fruits with ^{additional} no ~~more~~ seeds, extends the storage life of lemons and helps set various fruits.

ETHYLENE....promotes flowering, helps ripen fruits.

ABSCISIC ACID (AbA) (DORMINE) Helps protect the plant against heat, cold, sun, drought (closes stomata,) fungi, disease, and mechanical damage.

ZEATIN.....most active in agars used for tissue culture.

Other hormones are: adinine, amino-cyclene acetic acid, azido-indole acetic acid, benzyadinine, cynatin, kinetin, triacanthine.

As you might imagine, hormones are usually produced in very small quantities, and likewise, when we use these to increase growth we must use very small or dilute amounts. A rather readily available solution of potassium gibberellate which seems to really "perk up" plants contains only five-thousandths of one percent.....not very much.

You have no doubt heard of 2,4-D before. It is an active ingredient in Weed-B-Gone and several other broad-leaf weed killers. It works by forcing a plant to outgrow its food supply (mostly water) in effect, starving it to death. Yet if a very dilute solution is used it can be utilized effectively as a growth stimulating hormone.

There is still a vast amount of knowledge to be gained about growth hormones: control of manufacture, interaction with other hormones within the plant, etc.... . Even now, though, there is enough information and material for hobbyists to play with. We know succulents tend to react differently from other plants. Perhaps growth hormones have a different from normal effect on them.



ORDERING CACTUS AND SUCCULENTS BY MAIL by PAT SPARKS

There comes a time when most avid succulent and cactus collectors cannot find the plants they want at nearby nurseries and mail order becomes inevitable. Ordering plants by mail generally means dealing with nurserymen about whom you know little or nothing. A few precautions should be taken to insure your success in this unpredictable endeavor.

1. Develop a list of mail order nurseries by going through the advertisements in the CSSA Journal, and other related plant periodicals.
2. Check them out with other collectors. Remember "anyone" can pay to run an advertisement. Colorful advertisements do not mean they run a reputable nursery.
3. Compare price lists. Prices of plants may vary from area to area. Remember the old adage "You get what you pay for." Also keep track of the time it took to receive your order. This may be an indication of the service you will receive on your plant orders in the future.
4. After going through all of this, your time has finally arrived to place your first order from the nursery of your choice. But hold back the temptation just a little while longer, and place a small order first to see the kind of service and the quality of the plants you will get.
5. Well, your plants just arrived and you eagerly tear open the container. Remember to check out your new plants carefully, for insects and general health, as well as for correct classification and labeling. Once you have checked them out, pot them to re-establish them as soon and as carefully as possible.
6. Sit back and enjoy them as you are getting your next order ready. Good luck!

